

WHAT IS CLAIMED IS:

1. A coated metal electrode, the metal electrode comprising a coating and an overcoating, wherein the overcoating comprises a surfactant, wherein the coating comprises a sulfur containing moiety in its molecular structure, and wherein a temporal stability of the coated metal electrode is greater than a temporal stability of a corresponding uncoated metal electrode.
2. The coated metal electrode according to Claim 1, wherein the sulfur containing moiety comprises a thiol.
3. The coated metal electrode according to Claim 1, wherein the sulfur containing moiety comprises a disulfide.
4. The coated metal electrode according to Claim 1, wherein the sulfur containing moiety comprises SO_x .
5. The coated metal electrode according to Claim 1, wherein the sulfur containing moiety is incorporated in a cyclic structure.
6. The coated metal electrode according to Claim 1, wherein the coating further comprises a hydrophilic group.
7. The coated metal electrode according to Claim 6, wherein the hydrophilic group is selected from the group consisting of a hydroxyl group, an amine group, a carboxyl group, a carbonyl group, and an oligo(ethyleneoxide)chain group.
8. The coated metal electrode according to Claim 6, wherein the hydrophilic group comprises a zwitterionic species.
9. The coated metal electrode according to Claim 8, wherein the zwitterionic species comprises an amine group and a carboxyl group.
10. The coated metal electrode according to Claim 6, wherein the coating further comprises a spacer between the sulfur containing moiety and the hydrophilic group.
11. The coated metal electrode according to Claim 10, wherein the spacer comprises an alkyl group or an aromatic group.
12. The coated metal electrode according to Claim 11, wherein the alkyl group comprises at least one of a methylene group and an ethylene group.
13. The coated metal electrode according to Claim 1, wherein the coating further comprises a compound selected from the group consisting of 2-mercaptoethanol, 2-

mercaptoethylamine, 3-mercaptopropionic acid, thiophene, cysteine, homocysteine, 3-carboxythiophene, and cystine.

13. The coated metal electrode according to Claim 12, wherein the compound is a stereospecific compound.

14. The coated metal electrode according to Claim 13, wherein the stereospecific compound comprises a mixture of D isomers and L isomers.

14. The coated metal electrode according to Claim 13, wherein the stereospecific compound comprises a D isomer.

14. The coated metal electrode according to Claim 13, wherein the stereospecific compound comprises an L isomer.

16. A method of preparing a metal electrode stabilized by a coating, the method comprising:

contacting a metal electrode with a substance comprising a sulfur containing moiety in its molecular structure; and thereafter

contacting the metal electrode with a surfactant, whereby a coated metal electrode is obtained, wherein a temporal stability of the coated metal electrode is increased relative to that of a corresponding uncoated metal electrode.

17. A method of sensing an analyte, the method comprising:

contacting a sample comprising an analyte to a metal electrode, the metal electrode comprising a coating and an overcoating, wherein the overcoating comprises a surfactant, wherein the coating comprises a sulfur containing moiety in its molecular structure, and wherein a temporal stability of the coated metal electrode is greater than a temporal stability of a corresponding uncoated metal electrode; and

obtaining a measurement indicative of a presence of the analyte in the sample.